



Hastings Br
13
Club Calls
ZL2AS
ZL2QS

Napier Br 25
Club Calls
ZL2GT
ZL2G

IRLP
Node
6793
147.250

Branch's
13/25
Net
9.00 AM
Sunday
Morning
670
Repeater

Editor
John Newson
ZL2VAF



Caught at the Br 20 Palm. Nth Table Sale on 6 Nov. Zoom in and note what it shows on the Tee Shirt of the Chief BBQ'er

<http://www.zl2gt.nz/>

<http://www.zl2as.org.nz/>

Emergency Call-in Frequencies: 3615khz and 670 repeater



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NAPIER BRANCH 25

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Committee Meetings: 7:30 pm, 3rd Tuesday of January, March, May, July, September, November

Club Calls: ZL2GT, ZL2G

Club Web Site: <http://www.zl2gt.nz/>

Club Nights: First Wednesday each month (except January) 7.30pm at the Club Rooms: 123 Latham Street Napier

Napier Amateur Radio Club

As was my practice last year, I present here my annual report to the AGM of Branch 25.

I have great pleasure in presenting my annual report to the Annual General Meeting for 2021.

Undoubtedly the highlight of this year has been the successful planning and execution of the NZART Conference and AGM, I'd like to thank the planning committee for a long campaign and very successful outcome, with some 2 years in the fulfillment of this challenge, I'd also like to thank all the presenters and volunteers on the day itself, without you this event would not have happened.

This year we have examined some candidates for the Amateur ticket, and have had a 100% success rate, Thank you to my co-examiner Ray ZL2RB.

We still need to encourage non attending Amateurs in our vicinity to rejoin our ranks in the Club.

Speaking of the Club, my thanks goes out to the many and varied presenters that have shared their skills and expertise at our monthly meetings. If you can do one of these turns, please let the committee know.

Covid 19 has continued to dominate our lives, and made assembly and general Club activities awkward, hopefully we can be rid of this soon.

Finally I would like to thank our executive and committee for their work this year. Karl our Secretary has opted to stand down from the Secretary position after an extremely well done job over 10 years and we will need a successor to take his place. I hope we can find a person to do this job, otherwise the Club will have to consider its position or type of Club for the future. The time to join in the running of the Club is NOW.

Thanks for your attention.

Fortunately, we secured the Services of Bryce ZL1BCG as Secretary at the AGM, thank you Bryce, also fortunately (and thank you) Karl ZL1TJ has stood on the Committee, your expertise is and will be appreciated.

Continued on Page 4

HASTINGS BRANCH 13

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Club Call:	ZL2AS and ZL2QS		

Club Nights: Fourth Wednesday each month at 7.30 pm Pakowhai Hall, Pakowhai Road, Pakowhai

From the Top Table

Hello all and welcome to the end of the year. I guess quite a few of you are counting down the days now till the 25 of December, I for one are not looking forward to it as it is always a rush to get things sorted out.

Well I have just heard covid is here in Hawks Bay so we wait to see what will happen. I guess we will be ok if we follow the rules and stick to our bubbles. Please scan the QR code if you are coming to the GM/AGM and wear your mask this coming Wednesday night. Don't forget meeting starts at 7.30pm or 1930 hours. It is home brew contest time so bring along some thing you have been working on, big or small it doesn't matter even a picture will do.

I wonder how many of you are sick and tired of fireworks. Gone are the days when you only heard them on the 5th of November, now I hear them all the time and we still have the fireworks to come on New Years night as well. I feel sorry for the people that have pets like myself as it

sends them nuts. The sooner they ban the damn things the better, I for one would like to see controlled displays.

Have a good think about your committee and if you want to change any thing or any one please put your hand up and nominate some one but check with them first. It's always good to have new blood up front so if you think you would like to give it a go get some one to nominate you as there will be some one that will second it for you.

Just so you all know David has been back to Auckland this week to see the eye doctors at Greenlane hospital and I'm sure we all wish him luck and safe travel there and back.

Well, that's it for this month so lets have a good turn out for the next meeting and have a lot of good ideas as to what you the club members want to see happen next year. We at the top table can't always be the ones coming up with guest speakers or things to do on meeting nights, so please give it some thought.

Cheers and 73s,

your President Blue ZL3TT HBARC.



*Branch 13/HBARC, Hastings, office bearers,
David Walker ZL2DW (Secretary),
Blue Smith ZL3TT (President),
Peter ZL2HM (Treasurer).*

From Page 2

The committee and office bearers otherwise stay the same at NARC, however this year I want to create some subcommittees to take on the various (and new) jobs around the Club, the idea being that the running of the club will be more spread while giving the opportunity to express and implement new ideas more easily. I hope this idea is supported.

A long wire to replace the old trapped dipole has been fitted to the club rooms, and although it may need some more work, thanks to the erection team (ZL1TJ, ZL2IT, ZL2MY, ZL1BCG) for the work so far. Mike ZL2MY has some ideas to improve the performance of this new antenna, so we may need to call you all back.

At the same time, Karl our resident Sparky, replaced the broken outside lights with LED down lights ,and graffiti was also removed from the outside walls by Mike ZL2MY our current building custodian. Good work all round.

Thats all for now, the next meeting is our final for the year on wednesday 8th of December at 7:30 pm. This takes the form of a social event, so bring a glass of your favourite plonk, I look forward to seeing you all there.

73 Dave ZL2MQ



FOR SALE

15	Kenwood TS-430 HF TCVR		100.00 ono
8	230/24 Volt 0.5 kVA Transformer		100.00 ono
6	KDK 20-30 VHF TCVR	No microphone	10.00
7	TAIT PS 12V 6A + Speaker?		20.00
14	Foot-to-Talk		20.00
18	Compass		Offer
21	2m? whip		Offer
36	Many short lengths of ½" coax		Offers
38	Many short lengths of ¼" coax		Offers
39	Assorted lengths and sizes of Wire		Offers
30	Mysterious base loaded HF whip		Offers
31	5.0 m length of Aluminium tube		Offers
33	3.7 m length of steel pipe		Offers
32	2.5 m length of steel pipe		Offers

Please contact Mike ZL2VM at michael.bull.nz@xtra.co.nz by 13 December 2021

THE NEXT MEETING OF Branch 13/HBARC, HASTINGS

will be the

- General Meeting
- Annual General Meeting
- Home brew Competition

7-30pm, 24 November, Pakowhai Hall, all welcome.



UNDER CONSIDERATION...

a visit to Taraponui (4300 ft asl, site of '725 and '405 repeaters, inland from Lake Tutira) in early Dec. 2021 or in Jan. 2022. You will need to be (preferably, talk to ZL2DW) an NZART member to go on site. Some car pooling with folk with 4WD vehicles should be arranged. Bring a camera, cold weather clothing and lunch. If you're interested please let David ZL2DW know so some planning can occur.



NO DECEMBER MEETING

There will be no December meeting for Branch 13/HBARC the first 2022 meeting will be on 26 January 7-30pm, Pakowhai Hall.



INTERFERENCE TO '670 REPEATER

Beginning on about Sunday 7 November interference was noticed intruding into the HB '670 repeater. It continued each morning following until it's apparent disappearance at about 11am Thursday 11 November. This is not the first appearance of this interference but this time it lasted for several (part) days.

I believe it may have been a Signal generator on 146.1mhz (complete with a 1khz modulation tone) sending a very weak signal to the 670 repeater and locking it on. Going to the repeater site two days in a row and attempting to locate and/or DF the offending signal cost me two working days of my time.

If someone thinks they may have some idea of the source of this interference I'd be pleased to hear from you (in confidence), thank you. It would be nice to have some conclusion re the source of the interference.

David (ZL2DW 0274 502501, Repeater Trustee for Branch 13/HBARC, Hastings)



Wanted

I am in the market for

- 1: AF239 Germanium UHF Transistor
- 2: 1N82A silicon UHF Diodes (2 Needed)

Thanks Eric ZL2TSU. eric.bristow7057@gmail.com

COVID 19 AND BRANCH 13/HBARC MEETINGS

We think it is true to say that the public information about meetings/gatherings is "in our face" and that Branch 13 members know what they have to do, if you don't then be responsible for yourself and

- (a) find out (do we really need to "hold your hand" ?) or
- (b) don't be offended when someone points out an issue to you.
- (c) bring your mask along to meetings and wear it.

Vaccinations.

If you haven't had your vaccinations then it is prudent for you not to attend a Branch 13/HBARC meeting. It's not the 'Club's job to ask each and every attendee if they have/haven't been vaccinated really that's your business. Again there is plenty of public information on the subject for you to work it out for yourself so, no vaccination don't come along (or talk confidentially to President, Blue ZL3TT).

Please do remember to sign the "Alibi Book" at the meeting. Not only does it provide a meeting minutes record it also provides evidence of who was there in case the "custard hits the fan" re tracing.

Enough said folks do the right thing. Be responsible for yourself and others around you at gatherings so we can continue to have our enjoyable meetings.

This subject will come up for discussion at our 24 November meeting.
(Branch 13/HBARC Committee)



Recording from 1956

Newsreel that few paid any attention to ... the year Elvis hit it big.

This is worth 2 minutes of your time.

Make sure you watch it all. This recording was made on 29 February 1956, 65 years ago.

Listen to the last 40 seconds for a great surprise.

1956.mp4



For Sale

" A new 5 meter length of 50mm OD Alloy tube, 3mm wall thickness. "

Reasonable OFFERS to ZL2AN Phone 06 8440109 0274 548 567

I originally purchased this tube, some time back, as the boom for a 2 element 7Mhz yagi .

Ideal for mounting a Magnetic Loop antenna, or vhf yagis etc

Today's trade price from Ullrich Aluminum is \$148 + gst

Simple filters from transmission line stubs

In my previous article, I discussed overload from broadcast stations and the filters that could block those strong signals from getting to your radio. In this article, I'll illustrate a few ways to make simple filters using nothing but sections of coaxial transmission lines.

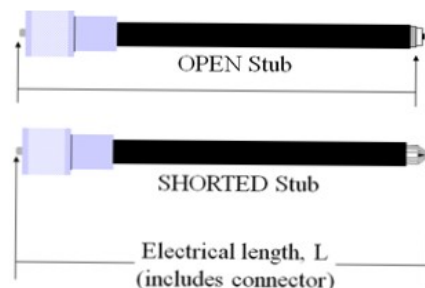
What Is A Stub?

A stub is just a length of transmission line terminated in a fixed impedance, usually a short or open-circuit. The transmission line can be coax, open-wire, waveguide, etc., but in this article, we'll be referring to coaxial cable. Single stubs can be used by themselves or in parallel with another transmission line to create a filtering effect.

Stub filter design utilizes three fundamental transmission line behaviors:

- Waves in a transmission line travel slower than in free space, so the physical length of the transmission line is always shorter than its electrical length. For example, if a piece of RG-58 is 1-wavelength (1 λ) long to energy traveling through it, the cable's physical length will be about two-thirds as long as the wavelength of the same energy traveling in free space.
- Impedances in a transmission line repeat every $\frac{1}{2}\lambda$ along the line. If I terminate a transmission line with a load whose impedance is 100 ohms at some frequency, f , then every $\frac{1}{2}\lambda$ along the line from that load, the transmission line will again present a 100-ohm impedance.
- Open and short-circuits reflect 100% of the incident wave's energy in a transmission line. For an open-circuit, the voltages of the incident and reflected waves are in phase and add together. The incident and reflected currents are out-of-phase and cancel so that there is zero current at the open-circuit. For a short-circuit, voltages cancel and currents add.

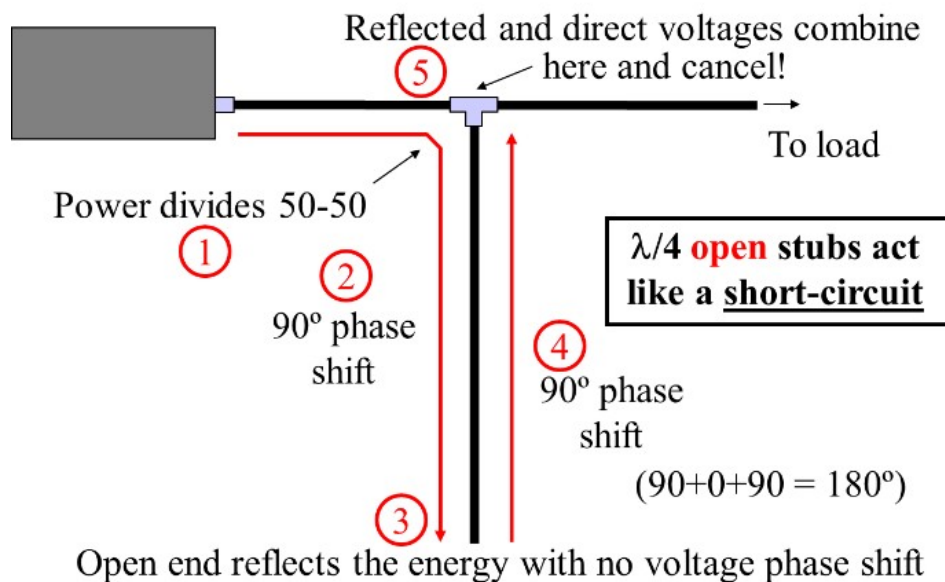
In this article, we'll only consider two basic types of stubs: open and shorted. Stubs are referred to by their electrical length and terminating impedance. The electrical length of a stub, L , is generally given in terms of wavelengths: quarter-wave, half-wave, and so forth. Note that for a coaxial cable stub, the length includes the cable and any connectors.



How Does a Stub Create a Filter?

Stubs are used as filters by creating a short- or open-circuit at a specific frequency. The stub is then placed in a signal path to either pass or remove signals of that frequency.

The left-hand figure below illustrates how a $\frac{1}{4}\lambda$ open stub creates an apparent short-circuit. Imagine a single packet of RF energy just a few cycles long—a very short CW dit. The RF wave travels in the line from the transmitter, encountering the junction of the stub and the rest of the line. The wave divides 50-50 between the line and stub at that point (1). The wave traveling down the stub is phase shifted by 90 degrees because the stub is an electrical $\frac{1}{4}\lambda$ long (2). At the open-circuit, the incident wave is reflected with no phase shift (3). The reflected wave gets another 90 degrees of phase shift returning to the junction (4) for a total phase shift of 180 degrees. At the junction, the out-of-phase waves cancel, creating an apparent short-circuit (5). The quarter-wave open stub presents a short-circuit at its free end!



Complete cancellation only occurs if the stub is completely lossless and exactly $\frac{1}{4}$ -l long. Loss reduces the out-of-phase wave, preventing a complete cancellation. Being off-frequency means that the net phase shift won't be precisely 180 degrees. Nevertheless, the range of frequencies over which most of the waves cancel is sufficient to be useful across a ham band. We just created a band-stop filter!

What happens if the stub is shorted, instead of open, as in the right-hand figure above? At the short, the incident wave is reflected with voltage shifted by 180 degrees instead of zero, making the total phase shift 360 degrees. The waves that originally split 50-50 now add back together, as if no stub was connected at all. The quarter-wave shorted stub acts like an open-circuit at its free end.

If our quarter-wave stub is doubled in physical length, it becomes a half-wave stub and the open- or short-circuit repeats at the free end. Doubling the frequency (halving the wavelength) without changing the physical length has exactly the same effect. As a result, a shorted stub that presents an open-circuit at its $\frac{1}{4}$ -l fundamental frequency, f , presents a short-circuit at its $\frac{1}{2}$ -l second harmonic, $2f$.

Using Filter Stubs

By far the most common application of a stub is to act as a filter for transmitter harmonics. The free end of a $\frac{1}{4}$ -l shorted stub also presents a short-circuit at the fourth, sixth, eighth, etc. harmonics where it is an integral number of half $\frac{1}{2}$ -wavelengths long. While passing energy at the fundamental frequency untouched, all even harmonics are canceled.

$\frac{1}{2}$ -l stubs also filter harmonics, but in a slightly different manner. The free end of a shorted $\frac{1}{2}$ -l stub presents an open-circuit at one-half its fundamental frequency because at that frequency it is a $\frac{1}{4}$ -l stub. The stub acts like a short-circuit at the frequency for which it is a $\frac{1}{2}$ -l stub and at all harmonics.

The table below lists the filtering effect of $\frac{1}{4}$ and $\frac{1}{2}$ -l stubs cut for different ham bands. The possibilities are endless! Remember that to filter a transmitted signal, the stub (or filter) must be attached at the transmitter output. Harmonics and phase noise must be filtered at the source! Once transmitted, they are like any other signal and can't be filtered out.

Useful $\frac{1}{4}$ and $\frac{1}{2}$ -l Filter Stubs

Stub Type	Passes	Nulls
$\frac{1}{4}$ -l 160m shorted	160	80,40,20,15,10
$\frac{1}{4}$ -l 80m shorted	80	40,20,15,10
$\frac{1}{4}$ -l 80m open	40,20	80
$\frac{1}{4}$ -l 40m shorted	40,15	20,10
$\frac{1}{4}$ -l 40m open	20,10	40,15
$\frac{1}{4}$ -l 20m shorted	20	10
$\frac{1}{4}$ -l 20m open	10	20

The 60, 30, 17, and 12-meter bands are absent from the table because stubs cut to pass or null these bands don't have a similar response in any of the other HF bands. These bands are not harmonically-related to other bands.

Stubs are also widely used as filters on the VHF and UHF bands, too. To minimize loss in the stub and increase harmonic rejection, use low-loss hardline for the stub. Since the wavelengths are shorter, the stubs are, too.

Most antenna analyzers have one or more functions that can show you the resonant frequency and electrical length of a stub. Look in the manual for instructions on how to use your analyzer this way. Velocity of propagation may vary from published values which will move the resonant frequency. It is best to start with your stub cut a little long and use an analyzer to tune the stub exactly. Remember to include the connector and any switches or adaptors when tuning.

Field Day Stub

Stub filters can come in really handy at multi-station Field Days. Transmitters are close together and the transmitted harmonics and phase noise can really be aggravating. This simple "Field Day Stub" design can help everybody get along!

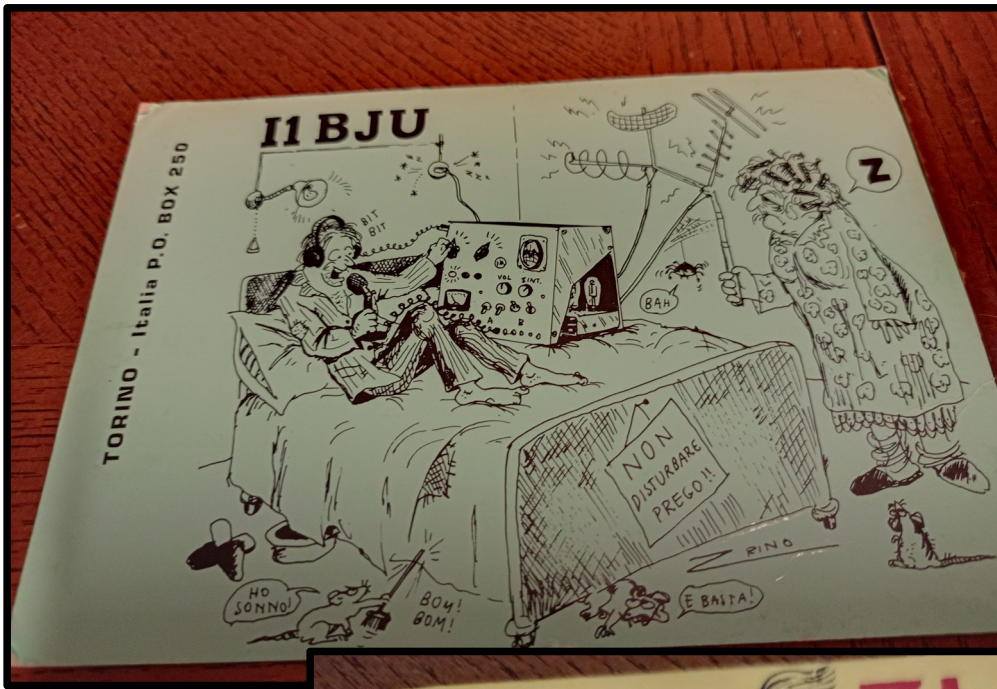
The stub is $\frac{1}{4}$ -l long on 40 meters. (The length is typical of RG-58A/U solid polyethylene dielectric coax.) The switch changes the stub between shorted and open. A miniature toggle switch will suffice for 100–200 watt power levels. Changing from short to open switches the harmonic null from 20 and 10 meters to 40 and 15 meters. When you tune the stub, aim for $\frac{1}{4}$ -l resonance on 7.075 MHz so the harmonic frequencies are 14.150, 21.225, and 28.300 MHz.

Stubs and Inter-station Interference

You'll find a lot more information about stubs in the ARRL's Antenna Book, but the best reference for amateurs is George Cutsogeorge, W2VJN's "Managing Interstation Interference." Now in its second edition, it is packed with good information about how interference is generated, the use of stubs, filter selection, and other practical information for the station builder.



CHB Meal and Meeting



A couple of old QSL Cards belonging to the (SK) father of Blair ZL2BFO they don't make 'em like this anymore



There have been lots of changes
Check out [AREC.nz](https://www.arenz.org.nz)